(a) The operation of ~~power converter is stable~~ the power converter was stable under the continuous mode and high duty cycle operation (e.g. T_{ON} / $T_{OFF} \approx 8/2$). The slope compensation ~~is~~ was increased in response to the increase of output power or the decrease of input voltage V_{IN} respectively, and vice versa. The slope compensation ~~is~~ was increased while V_{IN} ~~is~~ was decreased, thereby providing ~~an~~ enough linearity for a low V_{IN}. The ripple voltage waveform of C_{IN} is shown in Fig. (8).

$$\varepsilon = P_O \cdot t = \frac{1}{2} C_{IN} (V_b{}^2 - V_a{}^2)$$

$$C_{IN} = \frac{2.Po.t}{V_b{}^2 - V_a{}^2} \quad ; \text{where } V_b = 1.414\ V_{IN\,(AC)}$$

Since a low *Va* is ~~permit, means~~ permitted a small capacitor C_{IN} is allowed. The slope compensation is reduced in response to the increase of V_{IN}, thus ~~maintain~~ maintaining the performance of line regulation and audio susceptibilities.

(b) The slope signal will be reduced to zero under the light load and no load ~~condition~~ conditions. Additionally, the slope signal is synchronized with the switching signal Vsw, in which the slope signal is reset to zero at the end of on time (T_{ON}). Therefore the oscillation under the light load or no load is avoided. ~~The~~ Therefore dummy load or minimum load is not required.

What is claimed is :

1. An adaptive slope compensator for compensating the current mode power converter comprising :

a programmable current source which generates programmable current;

a grounded capacitor associate with said programmable current generate the slope signal;

a switching diode to synchronized said slope signal with the switching signal of power converter,

wherein said slope signal is reset to zero in response to the off of said switching signal;

input stage of said programmable current source having an input resistor coupled to the voltage feedback loop of power converter to effect the magnitude of said programmable current and said slope signal;

wherein the slew rate of said slope signal is responsive to the signal of said voltage feedback loop during the on time of said switching signal; and

said slew rate and magnitude of said slope signal are ~~direct proportion~~ inversely proportional to the change of input voltage of power converter and are ~~inverse~~ directly proportion to the change of output power of power converter;

output stage of said programmable current source having an output diode and output resistor in series coupled to the current feedback loop of power converter to achieve the slope compensation.

2. Adaptive slope compensator in accordance with claim **1** wherein

said programmable current source includes a said grounded capacitor at its output terminal to generate the waveform of said slope signal and provide a time constant for the adjustment of said slew rate.

3. Adaptive slope compensator in accordance with claim **1** wherein